QUESTION ITU-R 259/7

Timing applications and the definition of the second[[1]](#footnote-1)\*

(2021)

The ITU Radiocommunication Assembly,

considering

*a)* that recently developed optical frequency standards can provide significant improvement in the precision and accuracy provided by time and frequency devices;

*b)* that these optical frequencies are capable of being used as frequency standards with precision and accuracy improved by orders of magnitude over the current Système international d’unités (SI) second based on the hyperfine transition frequency of caesium;

*c)* that the joint Consultative Committee for Length (CCL) and Consultative Committee for Time and Frequency (CCTF) Working Group on Frequency Standards (WGFS) together with the Bureau international des poids et mesures (BIPM), maintains a list of recommended frequency values and wavelength values for applications including the practical realization of the definition of the metre and secondary representations of the second;

*d)* that the CCTF is working on a roadmap for the possible redefinition of the SI second in terms of optical frequencies to be presented to the Conférence générale des poids et mesures (CGPM) which may consider the redefinition at an upcoming meeting;

*e)* that the definition of the second may have an impact in many navigation, industrial, financial, and telecommunication systems,

decides that the following Questions should be studied

1 What are the various aspects of a possible redefinition of the SI second with respect to the impacts and applications in radiocommunications and other ITU areas of interest?

2 What revisions to current ITU-R documents regarding radiocommunication systems might be required if/when the SI second is redefined?

further decides

1 that the results of the above studies should be included in ITU‑R Reports;

2 that the above studies should be completed by 2027.

Category: S2

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1. \* This Question should be brought to the attention of the Telecommunication Standardization Sector and the Development Sector of the ITU. [↑](#footnote-ref-1)